

Vidicon

MAGNETIC FOCUS

1" - DIAMETER

MAGNETIC DEFLECTION

For High-Resolution Film Pickup with Black-and-White or Color Cameras. Grid No.3 and Grid No.4 Have Separate Base Terminals.

General:

Heater, for Unipotential Cathode:

Voltage (AC or DC) $6.3 \pm 10\%$ volts

Current at 6.3 volts. 0.6 amp

Direct Interelectrode Capacitance:^a

Target to all other electrodes. 4.6 pf

Spectral Response See accompanying *Typical Spectral Sensitivity Characteristic Curves*

Photoconductive Layer:

Maximum useful diagonal of rectangular

image (4 x 3 aspect ratio)^b 0.62"

Focusing Method Magnetic

Deflection Method Magnetic

Overall Length. $6.250'' \pm 0.125''$ Greatest Diameter $1.125'' \pm 0.010''$

Operating Position. Any

Weight (Approx.) 2 oz

Bulb. T8

Focusing Coil Cleveland Electronics^{c, d} No. VF-115-12, or equivalentDeflecting Yoke Cleveland Electronics^{c, d} No. VY-111-3, or equivalentAlignment Coil. Cleveland Electronics^{c, d} No. VA-118, or equivalentSocket. Cinch^e No. 54A18088, or equivalent

Base. Small-Button Ditetrar 8-Pin, (JEDEC No. E8-11)

Basing Designation for BOTTOM VIEW. 8ME

Pin 1 - Heater

Pin 2 - Grid No.1

Pin 3 - Grid No.4

Pin 4 - Do Not Use

Pin 5 - Grid No.2

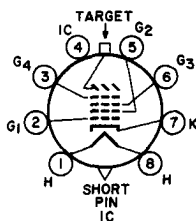
Pin 6 - Grid No.3

Pin 7 - Cathode

Pin 8 - Heater

Flange - Target

Short Pin - Do Not Use



DIRECTION OF LIGHT:
INTO FACE END OF TUBE

Maximum Ratings, Absolute-Maximum Values:

For scanned area of $1/2'' \times 3/8''$

Grid-No.4 Voltage 1000 volts

Grid-No.3 Voltage 1000 volts

Grid-No.2 Voltage 750 volts



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Grid-No.1 Voltage:

Negative bias value	300	volts
Positive bias value	0	volts

Peak Heater-Cathode Voltage:

Heater negative with respect to cathode . . .	125	volts
Heater positive with respect to cathode . . .	10	volts

Target Voltage. 125 volts

Dark Current. 0.25 μ aPeak Target Current^f. 0.55 μ a

Faceplate:

Illumination.	1000	fc
Temperature	71	°C

Typical Operation and Performance Data:

*For scanned area of 1/2" x 3/8" and
faceplate temperature of 30° to 35° C*

	Low- Voltage	High- Voltage	
Grid-No.4 (Decelerator) Voltage . .	500	750	volts
Grid-No.3 (Beam-Focus Electrode) Voltage ^g	300 ^h	450 ^h	volts
Grid-No.2 (Accelerator) Voltage . .	300	300	volts
Grid-No.1 Voltage for Picture Cutoff ^j	-45 to -100	-45 to -100	volts
Average "Gamma" of Transfer Characteristic for signal-output current between 0.02 μ a and 0.2 μ a .	0.65	0.65	
Visual Equivalent Signal-to-Noise Ratio (Approx.) ^k	300:1	300:1	
Lag ^m -Typical Value for minimum lag operation	7.5	7.5	%
Minimum Peak-to-Peak Blanking Voltage:			
When applied to grid No.1	75	75	volts
When applied to cathode	20	20	volts
Limiting Resolution:			
At center of picture.	900	1000	TV lines
At corner of picture.	600	700	TV lines
Field Strength at Center of Focusing Coil ^g	41 $\pm$ 4	52 $\pm$ 4	gauss
Amplitude Response to a 400 TV Line Square-Wave Test Pattern at Center of Picture	35	45	%
Peak Deflecting-Coil Current:			
Horizontal.	180	220	ma
Vertical.	33	40	ma
Field Strength of Adjustable Alignment Coil ⁿ	0 to 4	0 to 4	gauss



*Average-Sensitivity Operation for Live-Scene Pickup
10 Footcandles on Faceplate*

Faceplate Illumination (Highlight)	10	fc
Target Voltage ^{p,q}	25 to 60	volts
Dark Current ^r	0.02	μa
Signal-Output Current ^s (Typical)	0.3	μa

*Minimum-Lag Operation for Film Pickup
100 Footcandles on Faceplate*

Faceplate Illumination (Highlight)	100	fc
Target Voltage ^{p,q}	12 to 30	volts
Dark Current ^r	0.004	μa
Signal-Output Current ^s (Typical)	0.3	μa

- ^a This capacitance, which effectively is the output impedance of the 8572 is increased when the tube is mounted in the deflecting-yoke and focusing-alignment assembly. The resistive component of the output impedance is in the order of 100 megohms.
- ^b Proper orientation of quality rectangle is obtained when the horizontal scan is essentially parallel to the plane passing through the axis and short pin. The masking is for orientation only and does not define the proper scanned area of photoconductive layer. Final orientation should be such that the image also fits inside of any internal mask of the mesh assembly.
- ^c Cleveland Electronics Inc., 1974 East 61st St., Cleveland, Ohio.
- ^d These components are chosen to provide tube operation with minimum beam-landing error when mounted in the recommended position along the tube axis.
- ^e Cinch Manufacturing Corporation, 1026 S. Homan Avenue, Chicago 24, Illinois.
- ^f Video amplifiers must be designed to handle target currents of this magnitude to avoid amplifier overload or picture distortion.
- ^g Beam focus is usually attained by varying the focus-coil current to obtain a field-strength value within the range shown under *Typical Operation and Performance Data*. If the field-strength of the focus coil is fixed, beam focus is obtained within a ± 10 per cent range of the grid-No.4 and grid-No.3 voltages. However, the recommended ratio of 0.6 between grid No.3 and grid No.4 must be maintained as these voltages are varied.
- ^h In general, grid No.3 should be operated above 250 volts and be 0.6 of grid-No.4 voltage.
- ^j With no blanking voltage on grid No.1.
- ^k Measured with high-gain, low-noise, cascode-input-type amplifier having bandwidth of 5 Mc and a peak signal-output current of 0.35 microampere. Because the noise in such a system is predominately of the high-frequency type, the visual equivalent signal-to-noise ratio is taken as the ratio of the highlight video-signal current to rms noise current, multiplied by a factor of 3.
- ^m Defined as the per cent of initial value of signal-output current 1/20 second after illumination is removed. Values shown are for initial signal-output current of 0.3 microampere and a dark current of 0.004 microampere.
- ⁿ The alignment coil should be located on the tube so that its center is at a distance of 3-11/16 inches from the face of the tube, and be positioned so that its axis is coincident with the axis of the tube, the deflecting yoke, and the focusing coil.
- ^p The target voltage for each 8572 must be adjusted to that value which gives the desired operating dark current.
- ^q Indicated range for each type of service serves only to illustrate the operating target-voltage range normally encountered.
- ^r The deflecting circuits must provide extremely linear scanning for good black-level reproduction. Dark current signal is proportional to the scanning velocity. Any change in scanning velocity produces a black-level error in direct proportion to the change in scanning velocity.
- ^s Defined as the component of the highlight target current after the dark-current component has been subtracted.

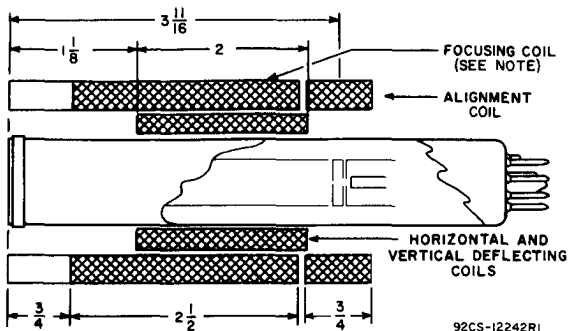


OPERATING CONSIDERATIONS

The *target connection* is made by a suitable spring contact bearing against the edge of the metal ring at the face end of the tube. This spring contact may conveniently be provided as part of the focusing-coil design.

COMPONENT LOCATIONS

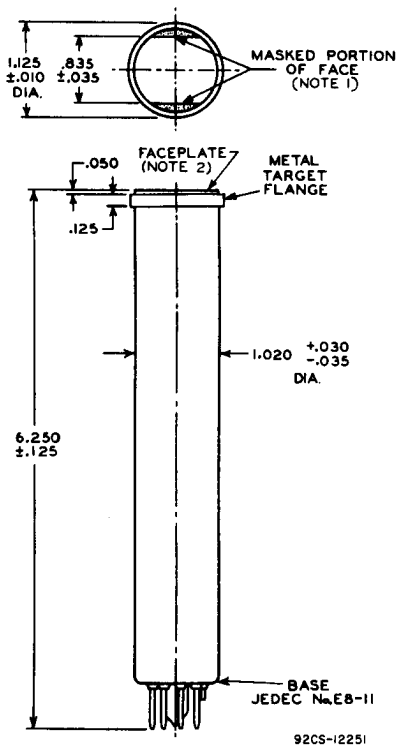
Recommended Location and Length of Deflecting, Focusing, and Alignment Components to obtain Minimum Beam-Landing Error



DIMENSIONS IN INCHES

Note: Cross-hatching indicates wound portion of focusing coil.

DIMENSIONAL OUTLINE



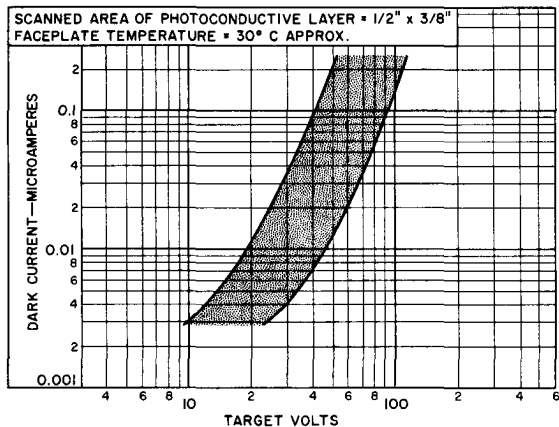
DIMENSIONS IN INCHES

Note 1: Straight sides of masked portions are parallel to the plane passing through tube axis and short index pin.

Note 2: Faceplate thickness is $0.094" \pm 0.012"$.

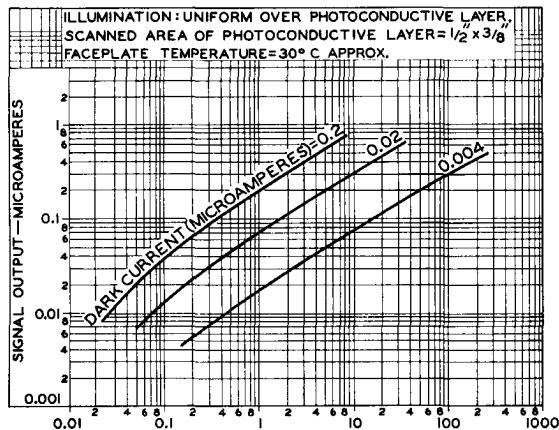


RANGE OF DARK CURRENT



92CS-12575

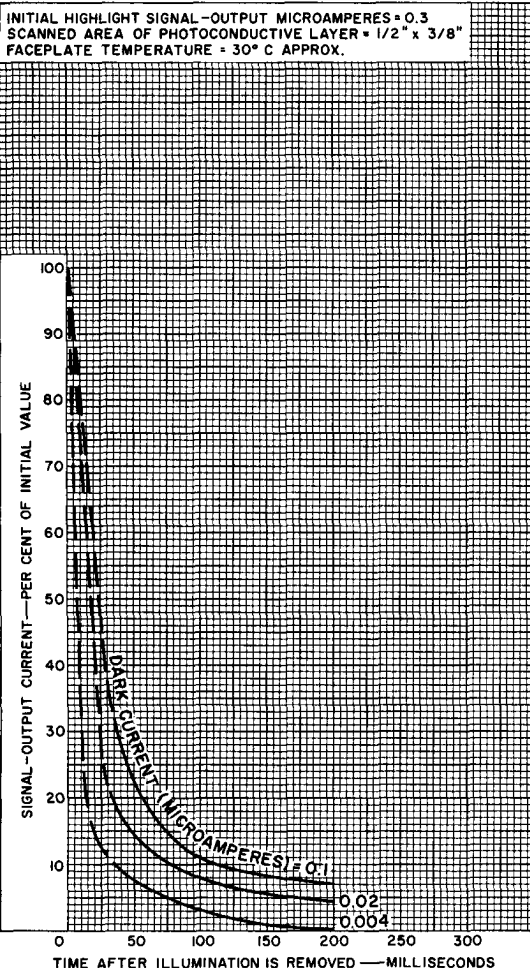
LIGHT TRANSFER CHARACTERISTICS



92CS-9495



TYPICAL PERSISTENCE CHARACTERISTICS



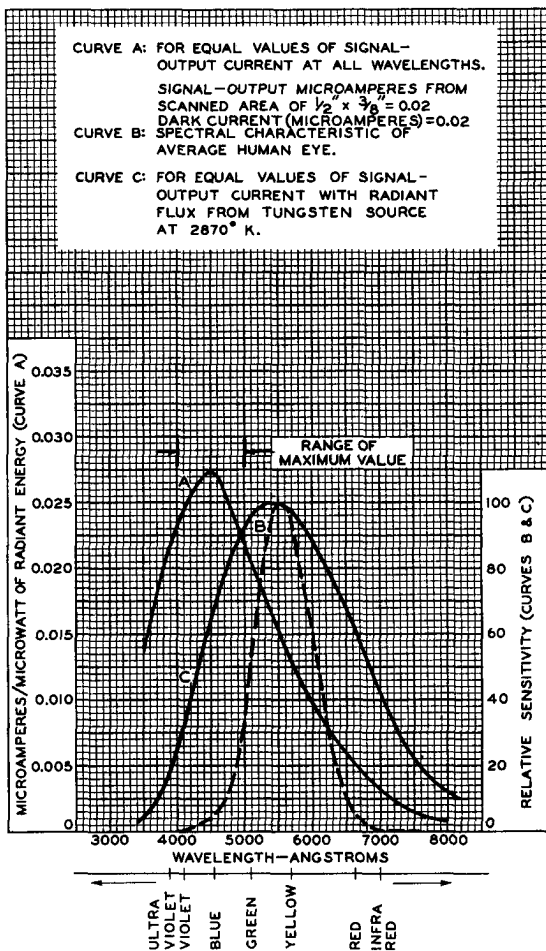
92CM-12580



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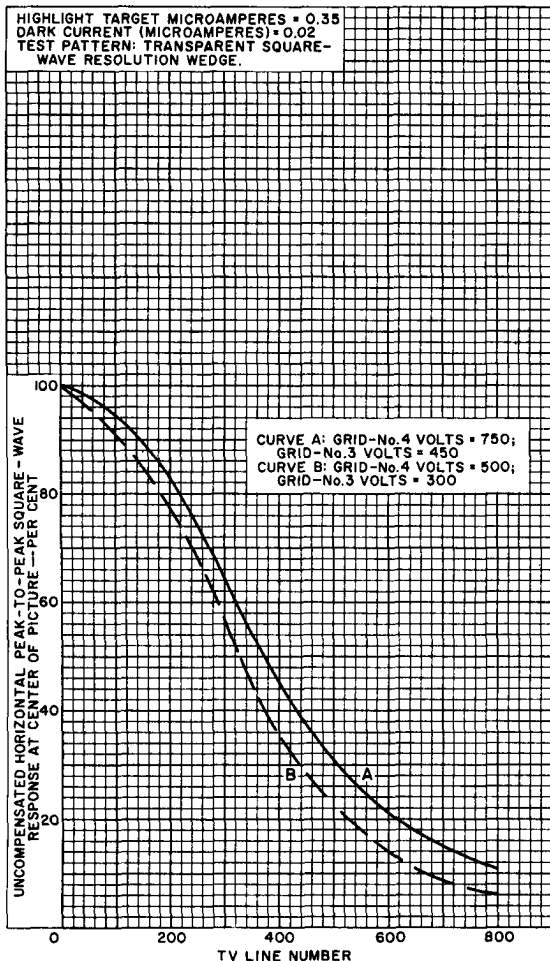
TYPICAL SPECTRAL SENSITIVITY CHARACTERISTIC



92CM-7763R2



UNCOMPENSATED HORIZONTAL SQUARE-WAVE RESPONSE



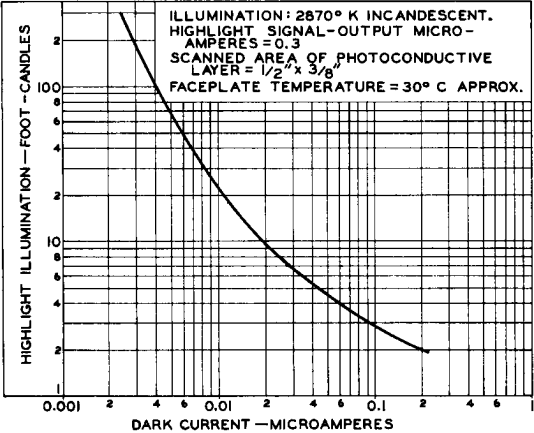
92CM-12232



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TYPICAL CHARACTERISTIC



92CS-9493

